

**ELEMENT PERSISTENT IDENTIFICATION****ABSTRACT**

5 Described herein are APIs that enable generating identifier information for a user interface element of interest within a user interface of a computer program based on a description of a hierarchical element path comprising parent elements that the user interface element inherits from. Unlike more fragile identifiers, an element path identifier persists across instances of the computer program, across different computers, 10 across different builds of the program etc. Also described herein, are APIs that enable searching for a location of a user interface element of interest in a target program using the element path identifier for the user interface. The element path identifier may be represented in a string data type or a user defined data type. APIs for converting between a user-defined data type and a string type and vice versa are also provided.

15 The element path identifier may be composed from common identifier information of component elements of an element path. Such identifiers may include class names of user interface elements, module names of application programs in the element path, and sibling order information. Other information could be added to further reduce ambiguity. For instance, runtime identifiers (e.g., process identifiers) may be added to 20 distinguish between user interface elements of two different instances of the same program. The presence of strongly named branch portions within which elements are guaranteed to be uniquely identified may be leveraged to persistently identify user interface elements by adding the unique identifiers of the named branch elements to the element path identifier.